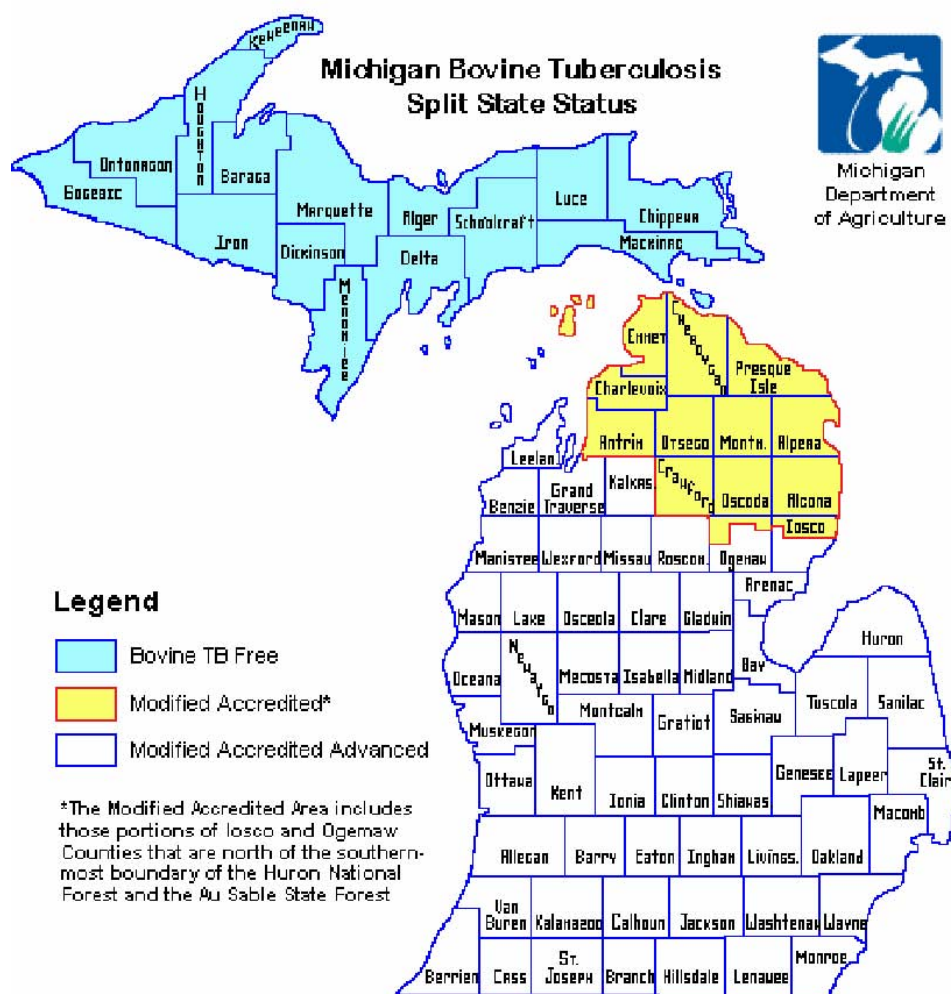


Tuberculosis Program Review

Review conducted November 5-9, 2007



Review report submitted to Eastern Region, Feb. 4, 2008

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Executive Summary

The review team congratulates the senior leadership of MDA and VS Michigan for taking ownership of the Bovine tuberculosis eradication program. In the limited time available since the last review, it is evident that there has been a major shift in attitude, evidenced by weekly meetings of upper management, regular meetings and updates with field staff, increased communications between VS and MDA at the headquarters level as well as increased communications between headquarters and the field. We commend the program leadership for this change and strongly urge that this cooperation and collaboration continue as a priority for management of the program.

Field staff were very appreciative of the improved communications and were also very positive about their perception that MDA and VS Michigan headquarters have taken more of a unified team approach instead of butting heads. It is especially noteworthy that the movement certificates were developed by a working group incorporating many field people, which undoubtedly made the resulting product better than had headquarters staff embarked on the project unilaterally.

Historically the bovine tuberculosis eradication program has been a State/Federal cooperative program, and it is encouraging that MDA and VS Michigan have adopted a partnering approach to management of the program.

While there are still challenges to be met, it is the sincere hope of the review team that the cooperative and partnering approach can be sustained, because it is only through this approach that the eradication program can have any potential for success.

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I. Introduction

This is the third review of the Michigan TB program in less than 2 years. The review team was primarily composed of prior reviewers, but because of other commitments and maternity leave, substitutions were needed to be made. We were also one member short and because of those factors, some of the areas identified in the previous review could not be analyzed as thoroughly as we would have preferred.

Another factor was that there was only 6 months between the time the review report was received by the Regional office and the time of this review. While it is gratifying to see the changes in attitude and communication which have taken place since the March review, it is also understandable that more time needs to elapse to truly evaluate the progress that can be made in addressing many of the recommendations. The review team recommends that the next review be scheduled for late summer or early fall to allow more time for MDA and VS Michigan to respond to the recommendations.

We appreciate the cordial and professional reception by the MDA and VS people in Michigan. Thanks to Drs. Halstead and Macarty for the spirit of cooperation.

II. Tuberculosis Program Management

A. Leadership, Planning and Direction

General leadership and direction for the program is provided by the AVIC, Dr. Reed Macarty, and the State veterinarian, Dr. Steven Halstead. The TB program is managed by Dr. James Earl, Assistant AVIC, and Dr. Mike Vanderklok, TB Program Manager, MDA; field personnel with MDA are supervised by Dr. Mark Remick. Interviews with these leaders indicated that they believe the program is headed in the right direction and they are

unanimous in agreement that State/Federal working relations in Michigan are in good shape. Since the March review, MDA has assigned Dr. John Tilden to assist MDA in responding to the recommendations of that review.

In general, the feeling we gathered from interviewing management and field people was that there has been a vast improvement made regarding communications and leadership. Field people commented that VS and MDA are now working together; instead of “butting heads” it is more of a team effort. We commend the Michigan leaders for making this commitment to communicate and include the field.

Other recommendations from the March 2007 review in this section were that Drs. Halstead and Macarty take a more active role in managing the subordinates who have primary responsibility and that the supervision of the DTE be transferred from Dr. Macarty to Dr. Earl. Both of these recommendations were acted upon. The latter change in the office organizational structure has greatly improved the flow of communication regarding TB epidemiology and surveillance activities.

RECOMMENDATIONS: VS-Michigan and MDA should continue regular communications with field employees, producers and other interested State and Federal agencies via periodic program updates.

Drs. Macarty and Halstead should continue to demonstrate the senior leadership required to manage a program as complex as the TB program in Michigan. By taking a more active role, they are demonstrating to their immediate subordinates as well as their field and office staff that they fully recognize and embrace the importance and priority of this program.

Dr. Tilden’s efforts in addressing the review were obviously appreciated by the Michigan team and the review team recognizes the challenges that were posed by the number of recommendations and commends MDA, VS Michigan, and especially Dr. Tilden for rising to these challenges.

B. Organization and Resources

Since the March review, progress has been made by providing cooperative agreement information to the Regional office.

In addition, MDA has placed more priority on the TB program by decreasing the time spent on other activities by their field people.

There has been additional progress in moving from the “TB VMO” and “Traditional VMO” concept towards using VMO’s as Field VMO’s.

RECOMMENDATION:

Continue to review and re-assign resources as needed to adequately address the needs of the TB program; respond to Regional office requests for cooperative agreement updates in a timely manner.

C. TB Management/Response Plan

Summary of Findings:

The Code of Federal Regulations requires that a State have a management plan for bovine tuberculosis whenever it is diagnosed in any species not covered by the CFR (Title 9 CFR, Parts 77.7(e), 77.9(d), and 77.11(d) are applicable in Michigan).

Michigan presented the review team with a copy of the Interagency Disease Management Plan. Time constraints prevented the team from critically analyzing the plan.

RECOMMENDATION: We commend MDA and its sister agencies for the compilation of the plan. The next program review should include an in-depth analysis of the plan and its implementation, including concerns, problems, and/or revisions that may have been

made.

D. Official Identification

Since March 1st, 2007, Electronic Identification (EID) is required on all cattle prior to marketing; bright or metal ear tags can be used in conjunction with but not in lieu of EID. Supplies of metal ear tags are still in the possession of producers. Regulatory personnel stated that it would be an impossible task to retrieve them. There is still no record of when producers applied these tags and it is questionable whether an accurate list is available as to whom they were issued.

EID is furnished at no cost to producers within the MAZ. Producers in the MAAZ and Free Zone buy their own.

EID can be ordered through the MDA offices in Lansing and Atlanta.

RECOMMENDATIONS:

The need remains to have records of applied official (metal) ID tags to correlate with official ID (metal) tags issued log to assist with tracing animal movements.

MDA field personnel reported that efforts have been made for producers to return unused official metal ear tags with some success. Continuing efforts in this area are recommended.

III. Surveillance

A. Slaughter Surveillance

Summary of Findings

We visited ***** in Plainwell MI. This slaughter facility is a mixed kill slaughtering a total of 175,000 cull cows and 335,000 steers per year. There is a dual system of tracking carcasses, carcass parts and ID through the plant computer located on the kill floor adjacent to the blood and ID collection station. The AIC has

an excellent working relationship with FSIS and plant management to maintain a high level of confidence in parts to ID correlation.

The other major federal slaughter facility in Michigan is ***** in Hudsonville (establishment 1816). This plant slaughters almost exclusively Michigan-origin animals according to the AIC. In 2007 this facility slaughtered 16,253 animals (12,526 adults). It is not among the top forty adult slaughter facilities.

In 2007, all slaughter establishments in Michigan met or exceeded their expected granuloma submission rates based upon the national standard. The remaining establishments in Michigan are either small, federally inspected facilities or State custom slaughter facilities. With the exception of three facilities, all slaughter less than 1,000 animals per year.

As a result of a 2006 review recommendation, out of State slaughter cattle are reported to the State of origin. The AIC stationed at the AO sends monthly reports to the AAVIC, who in turns sends these reports out quarterly to States. This is a requirement of the 2005 Bovine Tuberculosis Eradication Uniform Methods and Rules (UM&R) for cattle and bison.

The March 2007 report noted concerns from the AIC, regarding a lack of correlation between official identification, backtags, or brisket numbers, that electronic identification (EID) is not retained and that the only data collected from EID is transmitted to a computer in the front office and from there to the Farm Animal Identification Records (FAIR) database.

A visit to West Michigan Beef found appropriate correlation of identification and an electronic identification (EID) reader was installed in an alleyway where cattle must pass when moving from holding pens to enter the slaughter facility. Prior to installation of the EID reader, EID tags were saved and sent to Michigan, where the tags were scanned and input into the database.

RECOMMENDATIONS:

No items of concern. We commend the program partners for the progress made in addressing the recommendations in this area since the March review.

B. Tuberculin Testing

During an interview with the AAVIC and TB Program Manager, it was noted that in the past, there was difficulty with getting individual veterinarian data, but this has been resolved.

Accredited veterinary CFT response rates are currently entered into the FAIR system which then automatically downloads this data into the GDB. Michigan then uses the Discoverer software tool to extract this data and provide USDA with accurate CFT response rates. This protocol seems to be working appropriately.

There is no written policy for responding to veterinarians that have a low caudal folder responder rate. When accredited veterinarians are identified that do not meet the minimum response rates, USDA sends a letter to the private veterinarian that he/she must inform the USDA office before their next WHT and a federal VMO would visit them to assist them with this next test and try to determine the cause of the low response rates. Of over 350 fee-basis testing veterinarians, most are meeting the minimum standard. In the past, to be eligible to conduct fee basis testing, veterinarians completed a one day training. New veterinarians wanting to become fee basis eligible now work with a regulatory veterinarian. In addition, training is offered to veterinary students at the veterinary college in the spring.

RECOMMENDATIONS:

Continue annual monitoring the CF response rates for all testing veterinarians.

Develop a written protocol describing the steps being taken for veterinarians not meeting the minimum CF response rate.

C. MAAZ/AFZ Surveillance

Summary of Findings:

Under the 2007 Memorandum of Understanding (MOU) (and previous MOUs) between the State of Michigan (Michigan Department of Agriculture (MDA); Michigan Department of Natural Resources (DNR)) and USDA (APHIS VS), the State agreed to conduct statewide surveillance for tuberculosis. It was agreed that the surveillance include randomly selected herds in the Modified Accredited Advanced Zone (MAAZ) and the Accredited Free Zone (AFZ).

An ongoing concern since at least the 2006 review, is failing to test the required number of herds for random surveillance in the MAA and AF zones. There appears to be some confusion over the number of herd tests required annually. The 2006 review notes that Michigan had only completed “650 out of the 1400 herd tests” for the 2005-2006 random surveillance testing cycle (calendar year [CY]). Per the MOUs for 2005 and 2006, a total of 800 herds are required to be tested annually, for a total of 1600 herd tests every 2 years (775 herds - MAA, 25 herds - AF). The Michigan Surveillance Plan (July 2002) describes a total of 1,800 herds be tested in the then-free zones (current MAA and AF zones). For the purposes of this review, the 800 annual herd testing requirement will be used.

At the time of the November 2007 review, the annual number of herd tested for random surveillance in the MAA and AF zones are as follows:

CY 2005, 788 (12 short)
CY 2006, 541 (259 short)
CY 2007, 688 herds (112 short)

3 year total, $2,017/2,400 = 84$ percent
(source: October 19, 2007 email from DTE for CYs 2005 and 2006)

For CY 2007, as of November 1, 2007, 566 (71 percent) out of 800 herds had been tested, with 122 herds scheduled for testing, for a total of 688 herds. Collectively for CYs 2005-07, 2,017 herds have been tested of 2,400 required (84 percent).

A process was implemented in January 2007 whereby the AAVIC reviews all test charts. Tests conducted for reasons of show or sale are included when the test chart indicates the criteria for a whole herd test was also met. Earlier reports from Michigan that the required number of herds had been tested in CY 2005-06 were erroneous; this was a result of duplicate entries, test reading dates prior to 2005 and similar errors that have since been corrected.

The primary reason given for the testing shortfall is the increased trace testing as a result of 7 new affected herds in fiscal year 2006 diverting resources from random surveillance testing. During the November 2007 review, Michigan requested that whole herd tests conducted as a result of trace testing be counted towards the 800 herd total. The March 2007 review reported the following reasons for the 2006 shortfall in surveillance testing: the 2006 herd list was not received by the AO until either April or May 2006; the 2006 primary testing (Code 1) list as well as the replacement (Code 2) list each contained over 80% inaccuracies (substantiated by documentation from the AO). Inaccuracies included such things as duplicate herds, incorrect addresses, incorrect phone numbers, and herds which no longer existed. These inaccuracies had been an ongoing problem (since 2003) and resulted in far more busywork for field staff as they try to identify and remove nonexistent herds from the surveillance list and then seek replacements.

The TB Program Manager noted that improvements have been made to generating herds for random surveillance. For example, premises registered in order to obtain RFID are added to the surveillance database. Field staff noted that new herds are also found when dairy producers obtain a Grade A permit. Other new producers are found by chance, for example, when looking for a herd on the list. It is estimated that there are now approximately 20 percent 'bad' premises on the list, compared to 80 percent in the recent past.

During the March 2007 review, the AO reported that the 2007 list appears to be more accurate and this was corroborated by conversations with randomly-selected field staff. At the November 2007 review, conversations with field staff revealed that the surveillance herd list quality improvement has been maintained, although an example was given that 55 herds may be tested from an initial list of 120 premises (approximately 50 percent inaccurate premises), indicating there is additional room for improvement. Field staff also noted that at times, an extended period of time passed before receiving a new list of producers.

The March 2007 review found a lack of communication between the State, AO and their respective field staffs. Field staff described that they no longer need to seek out updates because updates are sent to them. This communication occurs through weekly or biweekly emails and bimonthly meetings. State and federal field and headquarters staff were unanimous in expressing that communication to give guidance, answer questions and keep field staff updated and informed regarding the status of the TB program and statewide surveillance, has substantially improved within and between agencies.

The memorandum giving guidance to field staff on surveillance herds and protocols (previously dated 2003) was to be updated, per the March 2007 review (item #19). This memorandum has been updated and received by field staff.

The March 2007 review noted that field staff were not updated on the outcome of compliance activities for herds that refuse to test. Compliance updates from the compliance officer are now included in monthly meetings. A memorandum on compliance protocol was received by field staff in August 2007. Field staff noted that the compliance workload is more than can be handled by two compliance officers.

RECOMMENDATIONS:

Every effort should be made to complete testing of the random

surveillance herds selected for 2007. Regarding the request to include whole herd tests from affected herd tracing, the review team disagrees with mixing and matching some targeted surveillance with random surveillance in an attempt to reach a goal which was agreed to in 2005. VS and Michigan need to agree on a plan for targeted surveillance for 2008 and beyond.

Track the number of herd tests for random surveillance testing completed throughout the year and **ensure that a shortfall will not occur for CY 2008** and future years (given that random surveillance is continued for CY 2008 in lieu of targeted surveillance, see 'Targeted Surveillance,' below).

Systematically identifying an accurate list of producers from which to select for random surveillance, especially in the MAAZ, has been an ongoing problem. Continue efforts to improve the quality of the producer list sent to field staff, and ensure that additional lists are provided to field staff in a timely fashion.

Conduct quality control for the database of tested herds, including but not limited to excluding duplicates, including only whole herd tests and only tests read during the appropriate calendar year.

The memorandum giving guidance to field staff on surveillance herds and protocols (initial version 2003, updated in 2007) should be updated and redistributed annually.

Maintain the communication developed as a result of the March 2007 review recommendations (March 2007 review items #21 and #22).

D. MAZ Surveillance/Annual Testing

There are no MAZ herds past the 15 month limit on annual surveillance testing. This is a continued improvement over the findings at the March 2007 review, when there were 3 overdue herds, and 7 overdue herds at the time of the 2006 review. Of the 3 overdue herds, one herd had not been tested since October 2004; this herd was recently tested, though that testing was only

completed through the efforts of compliance and the presence of law enforcement.

Congratulations to the Atlanta area staff, both field and office, for their successful efforts to reduce the overdue herds.

RECOMMENDATION:

Continue to follow the protocol that was created for MAZ surveillance and ensure that testing is completed in a timely manner.

E. Targeted Surveillance

Michigan has initiated activities to explore and design a targeted surveillance program for the MAAZ and AFZ, intended for implementation in CY 2008.

During the March 2007 review, TB Staff for the State decided not to switch to a targeted surveillance program during CY 2007, due to concerns over its impact on certain parts of the Michigan livestock industry.

RECOMMENDATIONS:

Michigan and VS should explore and agree on a plan for targeted surveillance for 2008 and beyond.

Until a targeted surveillance plan is agreed upon, random surveillance activities must be continued during CY 2008 (see MAAZ surveillance section, recommendation #2).

Advisement: In discussions between MDA and USDA, USDA has continually emphasized that no applications for advancing status in the MAAZ would be considered until such time as the findings of this and previous reviews had been addressed to the satisfaction of both agencies and in place for at least one year. Michigan should bear in mind that USDA has no intention of eliminating the surveillance

requirement until and unless a change in status occurs. Any desire to change or eliminate surveillance once the MAAZ advances to TB Free status will need to be agreed upon at that time and then addressed in a revised MOU between MDA and VS. Until that time, the current surveillance program should be maintained and, in the interest of transparency, the State should be clear with its producers that this is the case.

IV. Investigations for Tuberculosis

A. Individual herd plans for tuberculosis affected herds

At the time of the last review the _____affected herd did not have a signed repopulation herd plan in either the Area Office or Atlanta office. Since then, the _____ herd plan was signed on 5-4-07 and is in their herd file.

A standard herd plan is now used for all affected herds outlining the options for and responsibilities of the herd owner. The herd plan is signed by both the herd owner and regulatory personnel with copies submitted to the Regional Epidemiologist and the Atlanta and Area Offices.

RECOMMENDATION:

None

B. TB Epidemiology and Infected Herd Management

The herd files continue to be maintained in the office of the primary DTE and are easily accessible. The previous review found that there were 8 herds under investigation from 2003-2004 and 3 herds under investigation for 2006 that remained open, even though 100% of their traces were completed. Since then, investigations with completed tracing and testing have an epidemiological summary with a formal case closure request. The reviewer noted an error on the Case Closure for the _____Farm and _____ Farm (see Attachment 1), which mentions tracing from herds other than the herds being closed; obviously simple

typographical errors, but ones that could result in a closure being disapproved at the Regional level.

The DTE is to be commended on his follow-through of the recommendations made by the last review. All 6-4A and 6-4B traces pending closure at the time of the last review have since been closed and copies have been forwarded to their respective states and to the Regional TB Epidemiologist. A review of the ***** affected herd investigation, specifically VS Form 6-4, revealed that “infected Holstein steer was most likely purchased from a dealer in the UP of Michigan”. Correspondence within the infected herd file from the investigating VMO revealed that the ***** steer was born in the herd of *****, and was less than a month old when sold to *****. The steer was identified as Bovigam suspect during area testing in December 2005 and was subsequently classified as tuberculosis infected. The ***** herd was dispersed in August 2005. Eight groups of cattle went to 7 different herds and one group of 26 heifers was consigned through the ***** sale. The 7 trace herds were subsequently tested negative.

Following recommendations made by the previous review, tracing of the 26 heifers has been accomplished. As of July 2007, a total of 6,000 cattle were tested and no additional infection has been found.

Two of the receiving herds tested in October (10/20/07 and 10/26/07) had Bovigam suspects that were to be retested mid-November 2007.

RECOMMENDATIONS:

Continue to provide epidemiological summaries for investigations. These summaries have been helpful in communicating the status of investigations to the DTE’s immediate supervisor and to the Regional Tuberculosis Epidemiologist. The reviewer understands that there was considerable pressure on the DTE to complete the recommendations made by the previous review in the relatively short

period of 6 months, and we all make typographical mistakes; however, it might be helpful to have another DTE or supervisor review the paperwork to ensure that the summaries are correct before they are forwarded to the Regional Tuberculosis Epidemiologist.

Continue to forward 6-4A and 6-4B investigations to the Regional Epidemiologist and respective states as they are completed.

We commend the program managers for completing the work regarding the previous recommendation regarding the tracing and testing needed for herds identified in the epidemiologic investigation of the Korthase infected herd.

C. Necropsy procedures on TB Reactors

DCPAH laboratory reports for the most recent 10 animals sent to the lab for examination were requested and copies were supplied to the review team. These reports were reviewed looking for consistency in ID numbers, sex descriptions and results of laboratory evaluation. In all cases the reports the identification numbers were consistent through out the report and all identification numbers were in agreement with other documentation, i.e. VS 1-27s. All reports were consistent with regards to sex characteristics and results of laboratory evaluations.

RECOMMENDATION:

The DCPAH is to be commended for the accuracy of the reports reviewed. The importance of accuracy in reporting all identification numbers as well as other results cannot be overstated. DCPAH has established a solid level of accuracy in these reports and vigilance must be maintained to insure that this level of precision continues.

V. Accreditation of Herds for Tuberculosis

A. Accredited Cattle Herds in the MAZ

Dr. Jim Earl has oversight for bovine TB herd accreditation in the State of Michigan. Copies of the "Protocol for TB Accredited Free Herds in the Modified Accredited Zone (MAZ)", the "Wildlife Risk Mitigation (WRM) Plan for Accredited Free Herds" and the "Inspection for TB Accredited Free Status" as well as the list of accredited herds in the MAZ has been provided to all of the Veterinary Medical Officers (VMO's) with responsibilities in the MAZ. Herds interested in becoming accredited are required to submit a Risk Mitigation Plan (RMP) when applying for accreditation. Herds already accredited that do not have a RMP in the new format will be required to submit one for reaccreditation.

WRM Plans are now being approved by the Michigan Area Office Designated Tuberculosis Epidemiologist (DTE), and the Regional TB Epidemiologist.

According to the Office Automation Assistant responsible for the accredited herd files, the most recent test results are placed in the accredited herd files. Six herd files were randomly selected by the reviewer for examination of completeness. All six herd files were found to contain the most recent test charts and Accredited-Herd Certificates.

At the time of this review, there were 28 herds accredited in the MAZ. Time constraints limited the field review of accredited herds in the MAZ to two premises by the reviewer who was accompanied by the Federal VMO responsible for herds in that area. The first premises is considered by the VMO to be a "model herd" for the accreditation program, while the second herd has had ongoing problems with recordkeeping but appears to be in compliance with the requirements of the RMP.

According to the VMO accompanying the reviewer, communication between the field and the Area Office regarding TB activities is much improved.

An inspection checklist for accredited herds was developed to standardize the evaluation of the level of risk associated with

wildlife based on cattle feed storage, feeding practices and wildlife control. This has been in use since August 2007 and has been well received by field VMO's.

A recommendation made in the previous review was for including Wildlife Services (WS) employees in herd accreditation inspections so that risks could be re-evaluated over time and that compliance with the RMG could be better evaluated. At the time of the last review WS indicated that they had the personnel for such joint inspections, however the reviewer was unable to determine if this had occurred.

RECOMMENDATIONS:

None

B. Captive Cervid Surveillance and Accreditation

The status of captive cervid surveillance and accreditation is improving greatly under the supervision and hard work of Angie Butler who started in July of 2006. She has brought strength and consistency to this part of the TB program. She is very organized and is keeping current with all timelines and requirements. Our review suggests that Michigan currently does not have enough manpower resourced to complete all the paperwork aspects of this program in a timely manner, but is in the process of redistributing workloads to help alleviate this issue. Field support is still not available to the program so most of Michigan's contact with producers is coming from the Lansing Office.

A summary of the history of how the TB cervid surveillance program was developed and current practices is as follows:

- 1 After finding the TB infected cervid ranch in 1997, Michigan worked with the industry to develop a mandatory statewide surveillance program for cervids.
- 2 The cervid industry has two general types of operations - farms and ranches. Farms are in the business of selling and moving live

animals (and typically handle the animals like other livestock farms) and ranches are large-scale, hunting operations where there is no way to handle live animals.

3 The surveillance program had two options - whole herd testing (for farms) and a tissue exam system (ranches). The tissue exam (slaughter based) system was based upon how FSIS looks for TB in reactor animals, and the TB monitored status contained in the cervid UM&R. The numbers required are based upon the TB monitored status requirements, and were to be done over 5 years. The five year period was to prevent herds that are in the building process to have to decimate their numbers in order to meet slaughter surveillance requirements. The review team wondered what surveillance is required on ranches after slaughter surveillance is completed after 5 years? It appeared that a cervid ranch would not be required to do any further testing. The answer given is that Michigan will now do TB surveillance on all CWD sample submissions submitted to the state. The CWD Mandatory program requires 100% of all animals that die, are found dead, or are euthanized be submitted for testing, and 25% of their culled/hunted animals each and every year be submitted for testing. Again, no live animals leave ranches or hobby facilities so disease spread from any of these facilities would be unlikely. Also, history has demonstrated that MI has very educated and disease-conscious producers by the fact that both of the privately owned cervid herds that have been diagnosed with bovine TB in MI were identified after the producers notified us that they had found suspicious lesions.

4 A new cervid law was effective June 1, 2001, and this law prohibits cervids from ranches from being moved live from the premises (no sales).

5 There have been requirements for TB testing of cervids prior to movement for as long as anyone can remember and these requirements were enhanced in 1998 also.

6 Michigan was doing surveillance in all the cervid herds in the MAZ area (and the boundaries of what was considered the infected area expanded over the years as we gathered more surveillance data on the wildlife) until 2003. The mandatory surveillance was then discontinued in cervids due to: 1) No TB had been found in these herds, 2) All the cervid herds are surrounded by a deer-proof fence,

3) The new cervid law prohibited the movement of cervids from untested herds, 4) and the tremendously high cost of testing these herds.

The review team finally asked what role does TB head lymph node surveillance (collected as part of CWD surveillance) from cervid ranches play in the overall surveillance program?? Michigan stated that this is going to be an important ongoing monitoring tool on all facilities, not just ranches. Collection of the samples is required through Michigan's CWD Mandatory Surveillance program. The CWD Mandatory program requires 100% of all animals that die, are found dead, or are euthanized be submitted for testing, and 25% of their culled/hunted animals, each and every year, be submitted for testing. Michigan is now wisely piggybacking TB surveillance onto these CWD samples and testing these samples for TB as well. This appears to be a creative and cost-effective method of getting ongoing TB surveillance on Michigan's captive cervid herds above and beyond movement testing and slaughter surveillance.

RECOMMENDATION:

Provide this section of the program with adequate human resources to meet testing and paperwork guidelines. Continue current surveillance including TB testing on samples collected for CWD surveillance.

VI. Other TB-related issues

A. Identification, Movement Controls, Market operations and Permitting

Just as we found in March, while we were interacting with MDA and VS personnel at the markets, Atlanta office and Mackinac Bridge we were able to observe their interaction with producers and livestock market personnel. They were well received, friendly and knowledgeable about program standards and regulations.

Good public relations and positive interaction with industry has always been a necessary tool in any eradication program. We commend MDA and VS employees in this effort.

1. Movement Controls at bridge – is it adequate? Are facilities and knowledgeable staffing adequate? How do they handle drive “drivebys”?

The MDA is staffing the Mackinac Bridge with two Pesticide, Plant & Pest Management employees, 3 Animal Industry Division employees that are scheduled to man operations at the bridge on a 24 hour, 7 day a week basis. AID has two additional employees trained for relief assignments, a few VS AHTs have been trained for relief also but according to MDA personnel have never been used. All employees who work the bridge on a regular basis are cross trained for 3PM and AID work. An inspection report is completed on each vehicle.

MDA compliance personnel provided us with protocols or reference sheets for animal movement requirements that are provided for MDA bridge personnel and Michigan State Police (MSP). We were also shown a work schedule that provided 24 hour, 7 days a week coverage of bridge inspection.

AID has two compliance officers that split responsibilities within the State, the lead officer in the Lansing area and the other in the northeastern part of the state. The lead officer is the primary contact for bridge personnel about permit issues. They have cell phone and radio communication capabilities. Radio capabilities are 97% throughout the state. Drive-bys do happen but not as frequently as in the past according to compliance and bridge personnel. When a drive-by occurs, a description of the vehicle is recorded or if DPS is available a stop may be initiated. According to compliance/bridge personnel a high percentage of drive-bys will be empty trailers, hauling animals other than cattle or just failed to see the signs.

We were told by MDA regulatory personnel that “drive-bys” are still recorded on a log at the bridge. Now, accurate “drive-by” information is reported on the monthly MDA report in Lansing. When license numbers on drive –by vehicles are obtained then compliance action is initiated in the form of warning letters or personal visits.

There are two permanent signs on the highway prior to crossing the bridge and a small temporary one between the toll booth and Welcome Center. The rolling marquis prior to entering the bridge notified motorists of the livestock check point ahead. There was also a small sign posted by the window at the toll booth. Compliance/bridge personnel do not have legal authority to stop or retain vehicles. An MOU has been signed with the Michigan State Police, Motor Carrier Division. MSP has allotted 24 hours per week for this activity, 16 hours for patrols in the MAZ and MAAZ, 8 hours per week for the Mackinac Bridge.

Regulatory personnel indicated that MOUs are being developed to use local sheriffs’ department resources to assist with mobile surveillance and bridge activities.

The inspection facility is maintained in the Welcome Center’s parking lot on the north side of the bridge with a small trailer for an office. The parking area has the potential for overcrowding in high traffic tourist seasons.

RECOMMENDATIONS:

MDA needs legal authority to stop and or retain vehicles. The 24 hours a week of assistance given by MSP is a step in the right direction but does not replace the need for MDA compliance personnel having the legal authority to stop and retain livestock vehicles for inspection purposes.

Hire one or possibly two additional MDA compliance officers located in the northern half of the state to assist with bridge activities and MAZ movements.

The MOU with MSP has increased monitoring of livestock movements within the MAZ and the MAAZ but due to the fact that only 16 hours is allocated it reiterates the need for MDA's legal authority to stop and retain livestock vehicles.

Signage should be placed on all major and minor roadways between the MAZ and MAAZ to better inform the public of restrictions on movement between zones.

Consideration should be given to having MDA personnel permanently assigned to the bridge be supervised by the compliance division of MDA.

2. Market operations and Permitting

Summary of findings:

The following Livestock Markets in the MA and MAA Zone were visited: *****

a. *****

This livestock market is located in the MAA zone. Signs were posted showing the new EID requirements effective March 1st 2007. The team observed about 200 cattle from the cat walk. All cattle had an EID ear tag. Market back tag to EID correlation was only being done on animals to be re-permitted. The market was equipped with two panel readers, one on each side of the alley where cattle enter the sale ring. The MDA veterinarian said that there was almost 100% readability. There is a head gate available to restrain animals if needed. The market is staffed by 1 MDA veterinarian and 1 MDA veterinary assistant. Approximately 600 cattle are sold here weekly. Between 90 and 95% come from the MAA zone and 1 to 5% come from the MA zone.

(1) Permits for cattle coming to the *****market from the MA Zone:

(i) Permits are faxed to the market office from the MDA office in

Atlanta or are retrieved from the FAIR database. MDA officials call the Atlanta office periodically to ensure all permits are current. Market personnel place permits in a basket for retrieval by MDA personnel for confirmation of arrival. Each animal from the MAZ re-permitted from this market is scanned by an MDA official to correlate the back tag with the RFID. The MDA official must then record the 15 digit RFID number by hand along with the back tag number onto the re-permit.

(2) Re-permitting MA origin cattle leaving the ***** market:

(i) "Real time" permits and certificates of movement are issued prior to cattle moving from the market. Only slaughter buyers are required to sign the permits.

(ii) Movement certificates were discussed with the MDA veterinarian.

The movement certificate process was initiated March 1st 2007 for cattle moving across Zone lines. Producers can call a toll free number for a permit number to be recorded onto their sales sheet.

b. *****

This market is located in the MAA Zone and has a monthly dairy production sale and a weekly calf sale. The market is staffed by one MDA veterinarian and one MDA vet. assistant. All cattle are processed through a squeeze chute where EID is scanned by market personnel; existing owner bangle tags are removed, recorded and correlated with the EID. A market assigned ear tag of various colors is placed in the ear and correlated with EID and owner ID. Metal ear tags are not recorded or removed. This information was provided by MDA veterinarian and market owner. At the March review, the market owner stated that out of state cattle are sold at this market during the dairy production sale. During this visit, the dairy production sale was in progress. The team observed cattle from three consignors originating from out of state. Health certificates pertaining to these consignments were available upon request at the market office. Hand out information on EID regulations provided by MDA was available in the livestock market office.

(1) Permits coming to ***** from the MA Zone.

(i) Permits are faxed to the market office from the MDA office in Atlanta or are retrieved off of the F.A.I.R. database. MDA officials will call the Atlanta office periodically to insure all permits are current. Market personnel will place permits in a basket for retrieval by MDA personnel for confirmation of arrival. Air cards have been supplied to MDA personnel working this sale to check the F.A.I.R. data base for permitted animals. MDA personnel are at the sale while MAZ cattle are selling to issue “real time” permits.

(2) Re-permitting MA cattle leaving the ***** sale.

(i) Technology is available at this market that allows the MDA veterinarian to query MA Zone addresses by entering zip code numbers into the system. Each animal from the MAZ re-permitted from this market is scanned by an MDA official to correlate the back tag with the RFID. The MDA official must then record the 15 digit RFID number by hand along with the back tag number onto the re-permit.

(ii) Movement certificates were discussed with MDA veterinarian.

The movement certificate process was initiated March 1st 2007 for cattle moving across Zone lines. Producers can call a toll free number for a permit number to be recorded onto their sales sheet.

C. *****

This market is located in the MA Zone and all cattle that are consigned here are permitted out. All cattle consigned here must have an EID. Consignors that brought cattle to the sale that did not have EID applied to their cattle brought their assigned tags and MDA personnel tagged the cattle.

The team observed the following regarding the reading, recording of EID and correlation of ID to back tags at this market. There were approximately 235 head of cattle at the market to be sold. There were 5 regulatory personnel involved in this process. Cattle are off loaded and are run through 2 tagging alleys. 2 MDA personnel are on the platform between the tagging alleys with an EID scanning wand and a

PDA. After back tags are applied to the cattle, the associated EID is scanned, the last 3 digits of the back tag is recorded into the PDA and this ties the EID to the back tag. That information is captured into the FAIR data base and is displayed on the screen of a laptop computer located in the tag office, directly behind the tagging alleys. A window is located in the tagging office so that communication between the back tagging/scanning crew and data entry personnel can be maintained. All herd owner information, back tag and EID is captured into the data base. Permits are generated at this time. Re-permits are issued on all cattle leaving the sale. There is currently no head gate or squeeze chute available at this market.

(1) Permitting cattle into the _____.

(i) Currently, there are no cattle being permitted into the _____. An entry permit is issued when cattle arrive and processed into the FAIR data base.

(2) Re-permitting cattle leaving the _____

(i) Re-permitting is done during the cattle sale. An employee from MDA writes down buyer information which is associated with the market back tag and a single copy permit generated by the market is included with the buyers sheet.

RECOMMENDATIONS:

All livestock markets should have a head gate or squeeze chute so that MDA personnel can restrain an animal when necessary.

Since the monthly dairy production sale at the _____ receives out of state cattle, as stated by owner, we recommend that this market be specifically approved if an advantage to the market owner can be shown.

We recommend that MDA personnel at the _____ record the complete back tag number including the alpha-numeric prefix into the F.A.I.R. data base and on the permit so that permits can be verified at slaughter plants that do not have an electronic

reader.

Correlation of the market back tag to EID is happening at some markets but a method of back tag to EID correlation should be put in place in ALL markets. Explore means to electronically correlate RFID and the back tag together on the re-permit in order to eliminate human error in the transposing of numbers, etc.

The buyer's or representative's signature should be obtained on all re-permits and certificates of movement at the time of issuance.

Re-permits and certificates of movement documents should be entered into FAIR as soon as possible after issuance.

3. Slaughter Verification

Three recent sequential sale days at ***** were selected to represent the current status of slaughter verification through National FAIR records. The sale from the week prior to the review team visit was excluded to ensure that sufficient time had elapsed since the sale for all records to be electronically updated.

After selection of the three dates, the incoming scan data from the sale yard was evaluated for all animals classified as slaughter animals.

Slaughter animals are animals that are permitted to the sale under the provision that the animals must be slaughtered within 5 days.

Results

The results of the data are shown in the table below.

Number Confirmed Slaughtered	Average Percentage Confirmed	Sale Date of Days to Slaughter Confirmed Animals Slaughtered
------------------------------------	------------------------------------	---

10/10/2007	207	155	77.3%	2.08
10/17/2007	249	200	80.3%	2.08
10/24/2007	184	137	75%	2.04

Totals 640 492 76.8% 2.07

Overall, 77 percent of animals intended for slaughter were confirmed slaughtered through National FAIR records. This compares to an average slaughter confirmation of ~79% found during the March 2007 review. The similarity of these results would suggest that without further efforts to identify and address the reasons for slaughtered animals not being entered into the National FAIR system the current system of slaughter verification will at best allow verification of slaughter of 4 out of 5 animals moved for slaughter only.

As with the March 2007 review the significant numbers of unconfirmed slaughter animals were from slaughter establishments that did not report scans at the time of slaughter. This category accounted for 46% of the unconfirmed animals and was distributed between 2 slaughter establishments. Additionally an equal number of slaughter only animals, 46%, were purchased by 2 cattle dealers and were unconfirmed as slaughtered via National FAIR records.

When animals were confirmed via slaughter scan the average time from sale to slaughter was 2.07 days. Though this represents an increase from the average 1.5 days identified during the March 2007 review it is still within the required 5 day time limit. Michigan is again to be complimented for having such a system in place that allows tracking of animals this quickly and easily.

4. Enhanced Slaughter Verification

The review team was supplied with a spreadsheet of an enhanced slaughter verification effort. This spreadsheet identified the animals sold as slaughter only animals on August 29, 2007 at *****. There were 204 animals sold on the indicated date as slaughter only. Results of investigations of individual animal disposition by the AIC are included on this spread sheet.

The results of the enhanced slaughter verification are summarized in the following table.

204 Total Slaughter Animals Sold			
	Individual Percentage		Cumulative Percentage
168	FAIR Verification	82.35%	82.35%
22	AIC Verification	10.78%	93.14%
1	Legal Movement	0.49%	93.63%
	Unconfirmed		
13	Slaughter	6.37%	100.00%

Nearly 94% of the animals that went through the ***** sale on August 29, 2007 were confirmed as having been slaughtered either through independent verification, i.e. National FAIR slaughter scans, or verification by regulatory personnel. The 22 animals verified as slaughtered by the AIC were all verified at slaughter establishments that have slaughter scan capabilities and had reported animals from the same August 29, 2007 sale as slaughtered. 13 animals however, remained unverified as slaughtered 2 months after the sale took place.

RECOMMENDATION:

Because the Michigan Department of Agriculture relies heavily upon National FAIR records to verify slaughter and to reduce the personnel requirement MDA is urged to continue their efforts to identify and address the problems associated with the slaughter scan data.

B. Terminal Operations/Feedlots

Conversion to annual surveillance testing.

Finding

The review team found that all feedlots had been converted to either terminal operations, regular herds or freezer beef operations. Michigan Department of Agriculture is to be

complemented highly for completion of this task ahead of the projected date of December 2007.

Terminal operations are in the process of being converted to yearly inspection, surveillance testing and herd inventory reconciliation. Estimated time to completion of this conversion is October 2008. This conversion should be monitored periodically until the completion date has been reached and then fully evaluated for completion.

Inspections

The review team was informed that a new inspection form for terminal operations was still under development.

RECOMMENDATION:

To insure uniformity of inspections and application of requirements Michigan Department of Agriculture is urged to complete the forms for inspections of freezer beef and terminal operations.

Note: Due to the recent tragic loss of key personnel further evaluation of the inspection process for both freezer beef and terminal operations was not performed due to the inspection process being changed from 1 responsible individual to multiple field personnel.

Movements

The recent movement permits for animals leaving 5 randomly selected terminal operations were evaluated. Movement permits and confirmation of slaughter or movement to another terminal operation were generally complete and accurate with one exception.

The exception noted is that all permits supplied to the review team have the following statement;

“The animal or animals identified on this certificate meet the requirements as described in the Federal Regulations, 9 CFR 77.5.”

In many cases complete information is omitted which would make this statement inaccurate. In particular age, sex and breed, which is required to be on a certificate as defined in 9 CFR 77.2, is missing.

RECOMMENDATION:

Michigan Department of Agriculture must insure that all required information is completed on all movement documentation.

C. Wildlife Issues

The current situation with TB in deer in the MAZ is the result of 100 years of human feeding of deer for the purpose of maximizing the enjoyment of deer hunting in this area of Michigan. These activities led to the unnatural congregation of deer around feeding sites and unusually high deer-densities that ultimately resulted in the conditions for endemic TB in deer. Over the last 10 years, much to the credit of MDNR and other local agencies, deer populations have decreased by over 50% using the tools of 1) greater harvesting pressure on deer and 2) prohibiting feeding and baiting of deer. Unfortunately, these trends have reversed over the last two years as deer densities and unlawful feeding and baiting have both increased. In addition, the latest deer data show both adult and yearling TB prevalences have increased in 2006 to 2.3% and 1.3% apparent prevalences respectively.

In the review team's discussions with MDNR, it was MDNR's impression that the current political landscape in Michigan makes it unlikely that hunters or private, hunt-club landowners in the MAZ will suffer any further consequences of having TB infection. It was also MDNR's impression that cattle producers simply have the

most to lose in this unfortunate situation. They also speculated that under any current likely scenario, the TB eradication effort in Michigan appears to be a long, protracted battle with no clear end in sight.

When asked what might be the best possible strategies for eradicating TB in the MAZ, MDNR responded that:

1 The use of wildlife vaccine technology to decrease transmission among deer as well as between deer and cattle looks promising. The new “Rapid test” can also be used to differentiate “vaccinates” from infected cattle if that determination was needed. Unfortunately, this vaccine technology might not be commercially available for another 5 years or more.

2 A second option may be to model the New Zealand response to TB eradication whereby no state or federal indemnity was available to infected farms. The New Zealand cattle industry took control of the eradication effort (instead of government regulatory agencies) and collected money from producers and paid infected herds only partial indemnity for their animals if they became infected in the endemic area. This encouraged producers to actively participate in efforts to not get the disease. Currently, there appears to be no real consequences or incentives that would encourage producers to prevent herd infection in the MAZ in Michigan.

3 A third option may be to shrink the size of the MAZ and then require producers to follow mandatory wildlife risk mitigation (WRM) practices or perhaps remove cattle entirely from this area since the current MAZ only constitutes 2% of the cash receipts for milk, calves and cattle for the entire state of Michigan.

RECOMMENDATION:

Michigan should 1) reconsider how to increase compliance on feeding and baiting restrictions and also consider increasing harvest pressure on the deer. In addition, Michigan should 2) reevaluate how they can motivate the wildlife landowners to take a greater role in providing solutions to the TB problem.

D. Biosecurity/Risk Mitigation Measures

Recommendations from the March 2007 TB Review directed Michigan to develop wildlife risk mitigation strategies (primarily in Accredited Herds in the MAZ) and incorporate them into a Wildlife Risk Mitigation Plan (WRMP). In addition, it was recommended that these WRMP's should be standardized, approved by the Regional TB Epidemiologist and signed by the herd owner. Furthermore, MDA, MDNR and USDA/APHIS signed an MOU in which Article 5, paragraph 11 states that "MDA and USDA/APHIS will identify a strategy for herd plan development for each cattle and bison producer in the MAZ by October 2007, in the interest of mitigating the risk of TB infection from wildlife sources. MDA will document that producers have been contacted and educated regarding the possible consequences of failure to have a herd plan and resulting reduced federal indemnity."

To this end, prior to the November 2007 TB Review, Michigan invested significant effort into understanding effective WRM Strategies and how to implement them in the Modified Accredited Zone. USDA - Wildlife Services in conjunction with MDA, MDNR and MSU worked together in a cooperative effort to address how best to get MAZ cattle producers to implement strategies to prevent TB transmission between wildlife and cattle. MDA and USDA developed a very nice TB Risk survey for accredited herds in the MAZ which they used to tailor a specific WRMP for each of these accredited herds. These plans are being implemented as herds became eligible for accreditation renewal.

The current strategy for developing herd plans for each cattle and bison herd in the MAZ generally agreed to by Michigan and USDA is a 4 step strategy. Step one will be an effective PR campaign to notify and educate producers about wildlife risk management plans and activities via farm visits, mailings and radio announcements. Step two will be to update the MAZ herd list and prioritize farms into high, medium and low risk categories. Step three will be to organize MDA/VS/WS staff so as to properly implement the WRMP's. And finally, step four will be to implement the WRMP's on high risk farms in the MAZ first.

Michigan should be commended on the fine work they invested into completing this recommendation from the previous TB review. However, this review team wants to strongly point out one major weakness to this strategy that MDA, MDNR and WS are all well aware of and expressed their concern clearly to the review team in November. And that weakness is the lack of an incentive or penalty that would encourage herd owners in the MAZ to take ownership of their wildlife risk mitigation efforts and therefore be willing and active participants in this effort. Such incentives or penalties have been demonstrated to be effective in other parts of the world in eradication efforts and include penalties like reduced indemnity payments, strict quarantines, and air-tight herd plans tied to repopulation and indemnity. Incentives include things like easing or removing existing movement restrictions after demonstrating a period of TB freedom. Under the current situation, there appears to be very little incentive for MAZ herds to work hard at preventing TB infection. We feel this situation is one of the factors underlying the lack of improvement in eradicating TB in the MAZ. Policy makers should explore ways to encourage cattle producers and hunting club owners to take more ownership of the TB situation.

Another component of the wildlife concerns of the review team is the seemingly ongoing question as to whether small mammals like opossums and raccoons and coyotes are a contributing factor to the wildlife to livestock transmission pathway. The review team discussed this question extensively with Drs. Schmitt and O'Brien from MDNR, and they felt that an honest appraisal of the current literature was that there was very little evidence these small mammals could transmit TB among themselves much less to livestock. Dr. O'Brien gave the review team some recent articles discussing the matter and MDA and USDA, VS agreed to make a decision on whether future cooperative agreement money might be spent on further examining this question in order to try and get a more definitive answer.

RECOMMENDATIONS/COMMENTS:

- 1) Provide clear incentives or penalties that encourage herd owners

in the MAZ to take ownership of their wildlife risk mitigation efforts and be willing and active participants in this effort. Examples might include reduced indemnity payments, strict quarantines, air-tight herd plans tied to repopulation and indemnity, and other penalties for becoming TB infected. 2) Decide on whether to conduct further small mammal studies in the MAZ and determine their possible role (or lack thereof) in wildlife to livestock TB transmission.

E. Herd Inventory Reconciliations

A copy of the Inventory Reconciliation Protocol for Modified Accredited Area was supplied to the review team. Reconciliations of herd inventories began on July 1, 2007 and continue. Inventory reconciliation reports are due into the Atlanta Office within 7 days of the completion of a caudal fold test for regulatory veterinarians and within 30 days for fee basis veterinarians. Unreconciled animals are then turned over to either the AIC or compliance personnel for investigation and resolution of the animal's status. If the surveillance test was performed by regulatory personnel the closing reports are due within 30 days of the test and within 60 days if the test was performed by fee basis veterinarian.

The most recent 5 reconciliation worksheets turned in by each testing veterinarian were reviewed for timeliness and completeness. These worksheets were generally complete and turned in with the caudal fold test charts.

The review team found that the spreadsheet identified in the Inventory Reconciliation Protocol did not exist. Records of whether reconciliation worksheets were turned in with test charts or not or reconciliations required further investigation were maintained in a separate schedule based system. This system was approximately 2 weeks behind in tracking the reconciliation worksheets that had been turned in. It was explained the loss of administrative support personnel had impacted the maintenance of the records and the development of the tracking spreadsheet.

Michigan is to be complimented on making great strides towards annual surveillance herd inventory reconciliations since the review in

March 2007. However, the system is not yet complete. Additionally the lack of personnel to address reconciliation worksheets as they are turned in reduces the time available for the AIC or compliance personnel to complete investigations of questionable animals if these investigations are to be completed within the specified time periods.

Affected Herd Inventory Reconciliations; Affected herd inventories are reconciled after each whole herd test as required in the affected herd's herd plans. In general the documentation was found to be in place although actual reconciliation of animal movements was not fully complete. Again due to resource availability problems.

RECOMMENDATION:

Michigan Department of Agriculture must complete the system used for annual surveillance herd inventory reconciliations as described in MDA's Inventory Reconciliation Protocol.

Michigan Department of Agriculture must either readjust the priorities of current administrative support personnel, or otherwise increase capacity, at the Atlanta office to insure that herd inventory reconciliations, both affected herds and annual surveillance herds, are processed and completed within the time frames established in the MDA's Inventory Reconciliation Protocol.